

Definition: Number of exceedences of the EPA health-based primary standards for ozone, particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead.

Similar to Healthy People 2010 Objective 8-1: Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for harmful air pollutants.

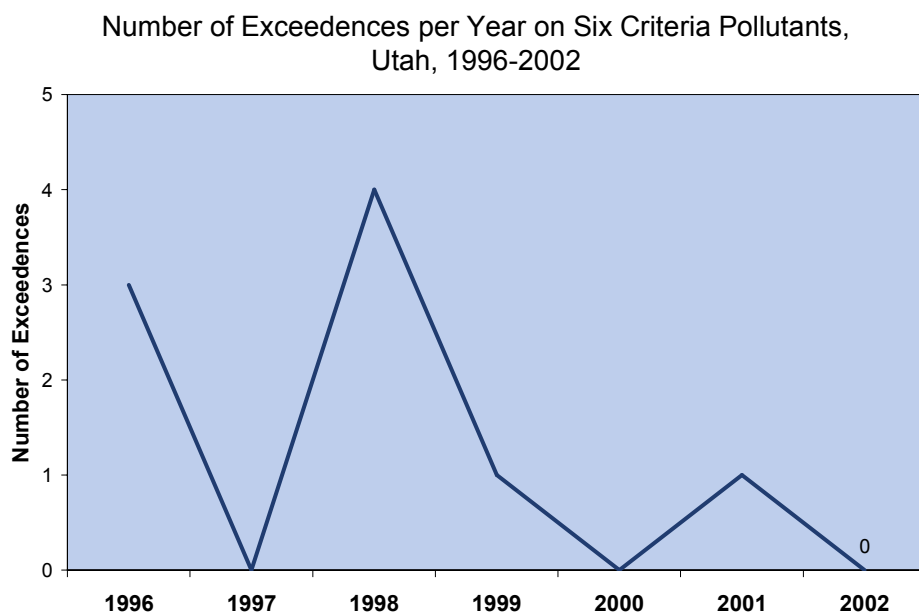
Why Is It Important?

Air quality plays a fundamental role in health and disease. Particulate matter, carbon monoxide, and sulfur dioxide affect breathing and respiratory function. Existing respiratory and cardiovascular disease may be aggravated, the body's defense system against bacteria and viruses may be altered, and lung tissue may be damaged. Health threats are most serious for those who suffer from cardiovascular disease, asthma, emphysema, influenza, and bronchitis. Children and the elderly are also likely to be adversely affected by heavy concentrations of these pollutants.

Risk Factors for Air Quality

The Utah Division of Air Quality issues health advisories whenever pollution increases to levels of concern as determined by U.S. Environmental Protection Agency criteria. Health advisories are most critical for people with respiratory and heart diseases, the elderly, and children. When a health advisory is issued, those persons should limit outdoor exertion whenever possible.

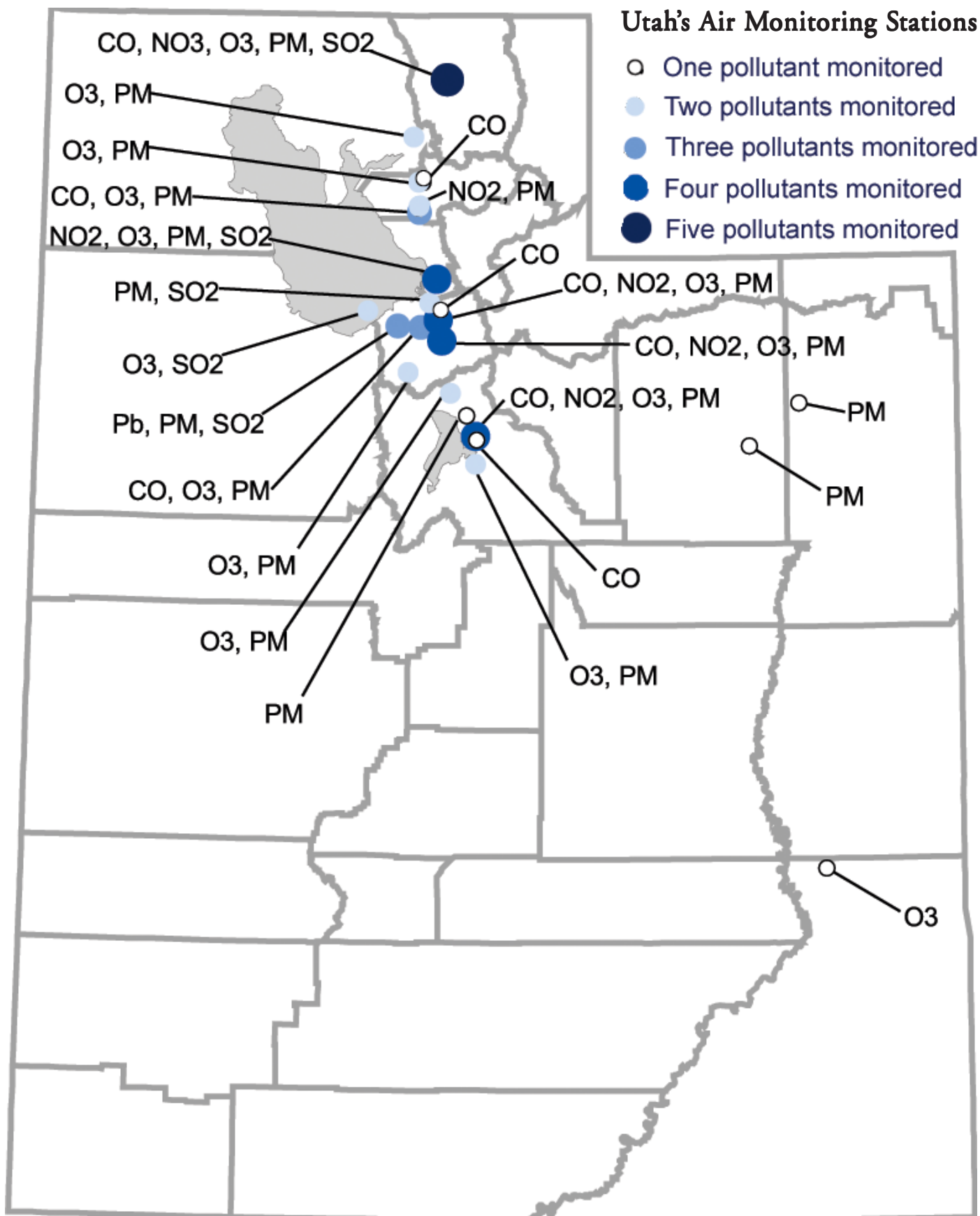
Ground level ozone is formed from automobile, industrial, and other pollutions by chemical reactions when there is bright sunshine with high temperatures. PM_{10} (particulate matter with an aerodynamic diameter of 10 microns or less) and $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5 microns or less) are generally created during a burning process and include fly ash (from power plants), carbon black (from automobiles and diesel engines) and soot (from fireplaces and wood stoves). Carbon monoxide (CO) forms when the carbon in fuels does not completely burn and sulfur dioxide (SO_2) is produced during the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes.



Source: U.S. Environmental Protection Agency (EPA), Office of Air and Radiation, AIRS data

Note: An "exceedence" is a day on which the air content exceeded the criterion for that pollutant, at any time during the day, at any of Utah's air monitoring stations.

Air pollution from vehicles accounts for more than half of the air pollution along the Wasatch Front. By simply parking your vehicle for one day, the average driver would keep just over $\frac{1}{4}$ pound of pollution out of the air. While that may not seem like much, if every driver along the Wasatch Front would park his/her vehicle for one day per week, emissions would decrease by 125 tons that week.



**Air Quality by Year
Utah, 1996-2002**

Year	Population	Number of Exceedences on Six Criteria Pollutants
1996	2,042,889	3
1997	2,099,404	0
1998	2,141,619	4
1999	2,193,006	1
2000	2,246,553	0
2001	2,295,964	1
2002	2,321,707	0

Source: U.S. Environmental Protection Agency
(EPA), Office of Air and Radiation, AIRS data

Childhood Exposure to Secondhand Smoke

Definition: Percentage of children aged 17 and under who were exposed to tobacco smoke inside the home during the month prior to the survey.

Similar to Healthy People 2010 Objective 27-9: Exposure to tobacco smoke at home - Children (ages 6 years and under)

Why Is It Important?

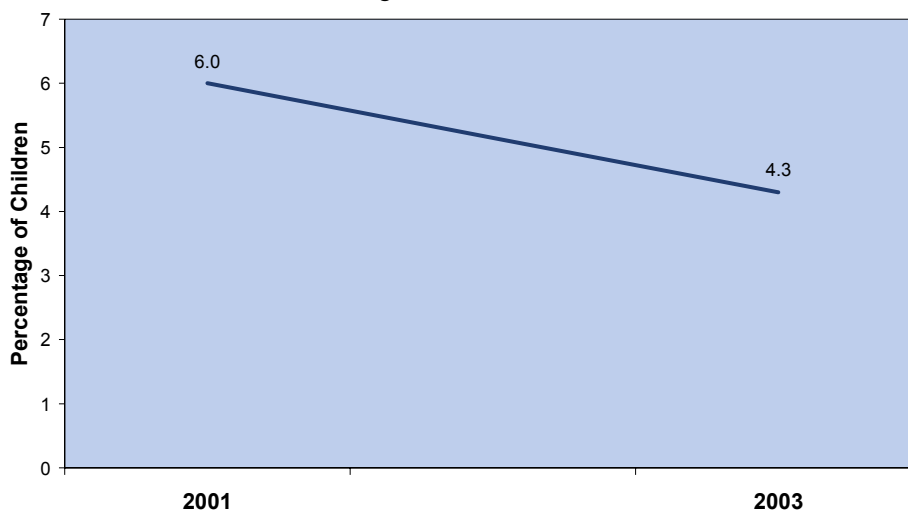
Childhood exposure to secondhand smoke (SHS), which can begin before birth and continue through childhood, is a major cause of morbidity in children. The presence of a smoker in a child's household has been shown to increase the child's risk for middle ear infections, asthma and other respiratory tract illnesses, sudden infant death syndrome (SIDS), and fire-related deaths and injuries. In addition, teens who live with smokers are more likely to become smokers themselves. Educational interventions and public policy to prevent children's exposure to tobacco smoke can lead to improved health and substantial savings in societal and health care costs.

Risk Factors for Secondhand Smoke

Most childhood exposure to SHS occurs within the home. Approximately 23% of adults in the United States currently smoke cigarettes,¹⁴ and 27% of children under six years of age live in homes where someone smoked inside the house at least 4 days per week.¹ In Utah the local health districts that report high rates of cigarette smoking also report high rates of childhood exposure to SHS. It is estimated that adults who smoke inside the house expose 4.3% of children in Utah (31,900 children) to SHS.

Other locations where children are at risk for SHS exposure include cars, friends' or relatives' homes, multiple dwelling units without smoke-free policies, parks, and outdoor sports facilities such as rodeos.

Percentage of Children Who Had Been Exposed to Cigarette Smoke Inside the Home, Utah Children Aged 17 or Less, 2001 and 2003

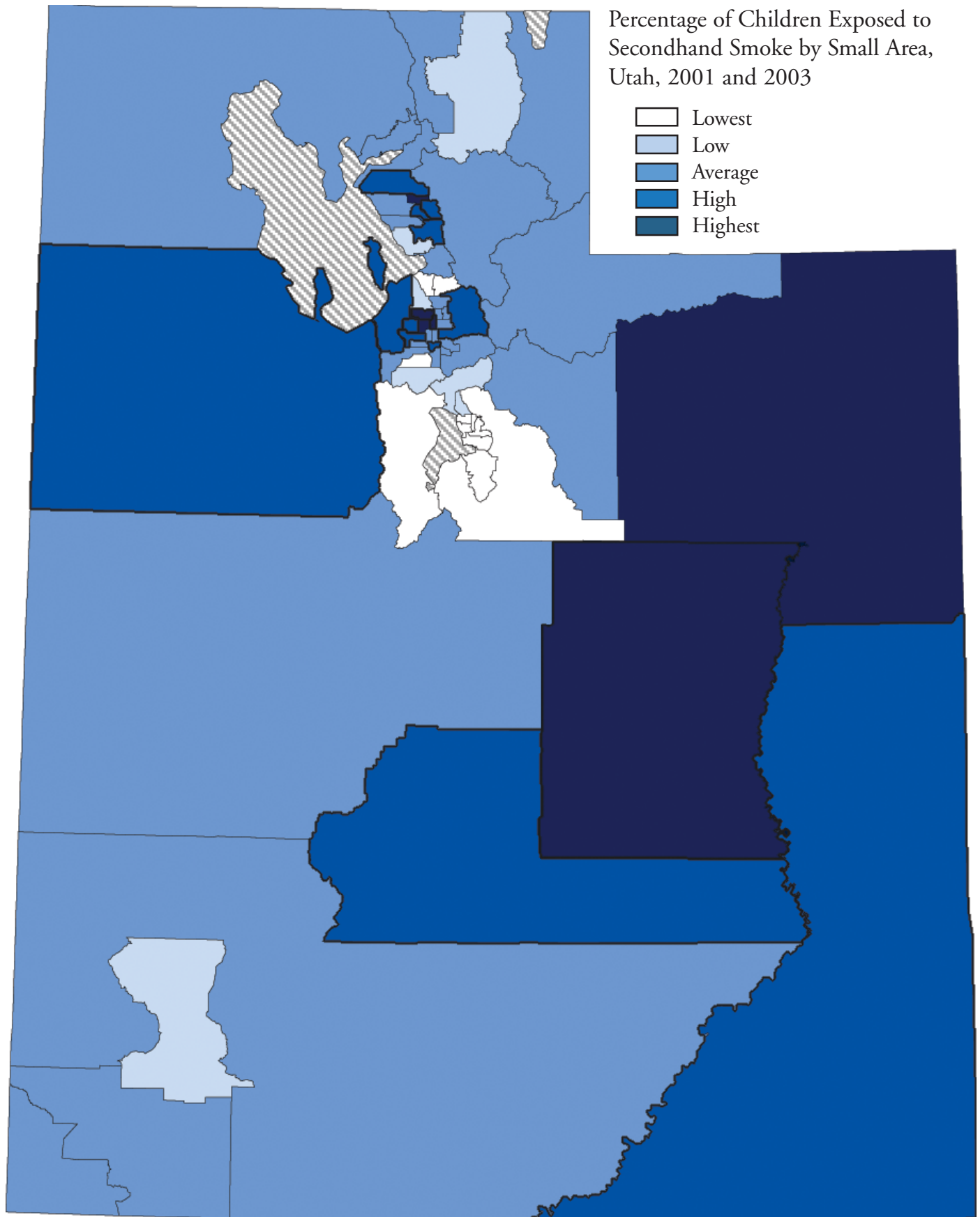


Source: Utah Health Status Survey, Office of Public Health Assessment, Utah Department of Health

* Children aged 0-17 who lived in a household where anyone smoked cigarettes, cigars, or pipes anywhere inside the home in the past 30 days.

Childhood Exposure to Secondhand Smoke Ranking, 2001 & 2003	Percent
Woods Cross/North SL	0.0%
Bountiful	0.0%
South Jordan	0.0%
Lehi/Cedar Valley	0.0%
North Orem	0.0%
West Orem	0.0%
East Orem	0.0%
Provo/BYU	0.0%
Provo South	0.0%
Springville/Spanish Fork	0.0%
Utah Co. South	0.0%
Syracuse/Kaysville	0.7%
Pleasant Grove/Lindon	0.7%
Logan	1.1%
American Fork/Alpine	1.2%
Cedar City	1.9%
Riverton/Draper	1.9%
Rose Park	2.4%
Foothill/U of U	2.5%
Other Cache/Rich Co.	2.9%
St. George	2.9%
Morgan/East Weber Co.	2.9%
Clearfield/Hill AFB	3.1%
Roy/Hooper	3.3%
Cottonwood	3.5%
Farmington/Centerville	3.7%
Murray	3.7%
Brigham City	4.1%
Other Washington Co.	4.3%
Avenues	4.5%
Other Box Elder Co.	4.8%
Other Southwest Dist.	4.9%
Wasatch Co.	5.2%
Downtown Salt Lake	5.4%
Sandy Center	5.5%
W. Jordan, Copperton	5.6%
Summit Co.	5.8%
Juab/Millard/Sanpete Co.	6.7%
Sandy, Northeast	6.8%
West Jordan No.	6.9%
Sandy, Southeast	7.0%
Taylorsville	7.0%
Millcreek	7.1%
Ben Lomond	8.7%
West Valley West	8.7%
Tooele Co.	8.8%
Sevier/Piute/Wayne Co.	8.8%
Grand/San Juan Co.	9.4%
Kearns	9.6%
Midvale	10.6%
Layton	10.7%
Holladay	11.5%
Magna	11.9%
Riverdale	12.1%
South Ogden	12.6%
South Salt Lake	12.7%
West Valley East	14.7%
TriCounty LHD	14.8%
Downtown Ogden	15.8%
Carbon/Emery Co.	16.7%
Glendale	30.8%

Childhood Exposure to Secondhand Smoke



Source: Utah Health Status Survey

Childhood Exposure to Secondhand Smoke

**Children Exposed to Secondhand Smoke by Small Area
Utah, 2001 and 2003**

Rank	Area of Residence	Population	Percentage of Children Aged 0-17 Exposed to Secondhand Smoke		
			Number of Persons	Crude Rates	
				95% Confidence Interval	
				Lower	Upper
	State Total	736,644	40,342	5.5%	(4.6% - 6.3%)
28	Brigham City	7,056	292	4.1%	(0.0% - 8.9%)
31	Other Box Elder Co.	7,908	378	4.8%	(0.0% - 9.8%)
14	Logan	16,519	176	1.1%	(0.0% - 2.6%)
20	Other Cache/Rich Co.	14,206	406	2.9%	(0.0% - 6.4%)
44	Ben Lomond	13,445	1,171	8.7%	(1.6% - 15.8%)
20	Morgan/East Weber Co.	11,337	333	2.9%	(0.0% - 7.1%)
59	Downtown Ogden	8,623	1,365	15.8%	(1.5% - 30.2%)
55	South Ogden	9,408	1,187	12.6%	(2.1% - 23.1%)
24	Roy/Hooper	13,594	454	3.3%	(0.0% - 7.4%)
54	Riverdale	7,504	909	12.1%	(0.0% - 27.5%)
23	Clearfield/Hill AFB	18,444	575	3.1%	(0.0% - 7.8%)
51	Layton	22,369	2,383	10.7%	(3.3% - 18.0%)
12	Syracuse/Kaysville	14,372	102	0.7%	(0.0% - 2.1%)
26	Farmington/Centerville	9,941	369	3.7%	(0.0% - 7.9%)
1	Woods Cross/North SL	6,372	0	0.0%	(. - .)
1	Bountiful	12,613	0	0.0%	(. - .)
18	Rose Park	10,651	254	2.4%	(0.0% - 5.8%)
30	Avenues	3,809	171	4.5%	(0.0% - 13.2%)
19	Foothill/U of U	5,660	141	2.5%	(0.0% - 7.4%)
53	Magna	8,245	978	11.9%	(0.0% - 25.9%)
61	Glendale	8,768	2,702	30.8%	(9.8% - 51.8%)
44	West Valley West	23,914	2,088	8.7%	(1.8% - 15.7%)
57	West Valley East	13,763	2,016	14.7%	(0.6% - 28.7%)
34	Downtown Salt Lake	8,577	461	5.4%	(0.0% - 13.3%)
56	South Salt Lake	5,968	756	12.7%	(0.0% - 27.2%)
43	Millcreek	13,858	983	7.1%	(0.0% - 14.4%)
52	Holladay	10,299	1,184	11.5%	(0.9% - 22.1%)
25	Cottonwood	11,044	391	3.5%	(0.0% - 8.7%)
49	Kearns	23,041	2,210	9.6%	(2.2% - 17.0%)
41	Taylorsville	10,736	752	7.0%	(0.0% - 15.1%)
26	Murray	7,308	273	3.7%	(0.0% - 11.0%)
50	Midvale	7,222	768	10.6%	(0.1% - 21.2%)
40	West Jordan No.	16,232	1,114	6.9%	(0.8% - 12.9%)
36	W. Jordan, Copperton	17,301	974	5.6%	(0.0% - 13.7%)
1	South Jordan	13,090	0	0.0%	(. - .)
35	Sandy Center	16,417	904	5.5%	(0.0% - 11.2%)
39	Sandy, Northeast	7,589	515	6.8%	(0.0% - 14.7%)
41	Sandy, Southeast	10,684	746	7.0%	(0.0% - 17.7%)
16	Riverton/Draper	24,859	473	1.9%	(0.0% - 4.2%)
46	Tooele Co.	15,348	1,352	8.8%	(6.0% - 11.7%)
1	Lehi/Cedar Valley	11,738	0	0.0%	(. - .)
15	American Fork/Alpine	16,731	198	1.2%	(0.0% - 3.5%)
12	Pleasant Grove/Lindon	16,638	119	0.7%	(0.0% - 2.1%)
1	North Orem	12,345	0	0.0%	(. - .)
1	West Orem	9,991	0	0.0%	(. - .)
1	East Orem	8,376	0	0.0%	(. - .)
1	Provo/BYU	9,491	0	0.0%	(. - .)
1	Provo South	14,123	0	0.0%	(. - .)
1	Springville/Spanish Fork	24,082	0	0.0%	(. - .)
1	Utah Co. South	10,970	0	0.0%	(. - .)
37	Summit Co.	9,054	528	5.8%	(2.7% - 9.0%)
33	Wasatch Co.	5,378	279	5.2%	(2.6% - 7.7%)
58	TriCounty LHD	14,036	2,076	14.8%	(10.9% - 18.7%)
38	Juab/Millard/Sanpete Co.	15,100	1,009	6.7%	(3.0% - 10.3%)
46	Sevier/Piute/Wayne Co.	7,540	667	8.8%	(3.2% - 14.5%)
60	Carbon/Emery Co.	9,061	1,513	16.7%	(10.9% - 22.5%)
48	Grand/San Juan Co.	7,592	717	9.4%	(3.3% - 15.6%)
20	St. George	15,357	440	2.9%	(0.1% - 5.6%)
29	Other Washington Co.	14,677	626	4.3%	(0.1% - 8.4%)
16	Cedar City	9,486	179	1.9%	(0.0% - 4.6%)
32	Other Southwest Dist.	6,801	333	4.9%	(0.0% - 10.0%)

Source: 2001 and 2003 Utah Health Status Surveys

Note: Confidence intervals were not calculated for values of 0% and 100%.

Definition: Number of culture-confirmed cases of illness caused by *Salmonella* species per 100,000 population.

Healthy People 2010 Objective 10-1d: Reduce infections caused by key foodborne pathogens - *Salmonella* species.

- U.S. Target for 2010: 6.8
- State-specific Target: 15.86

Why Is It Important?

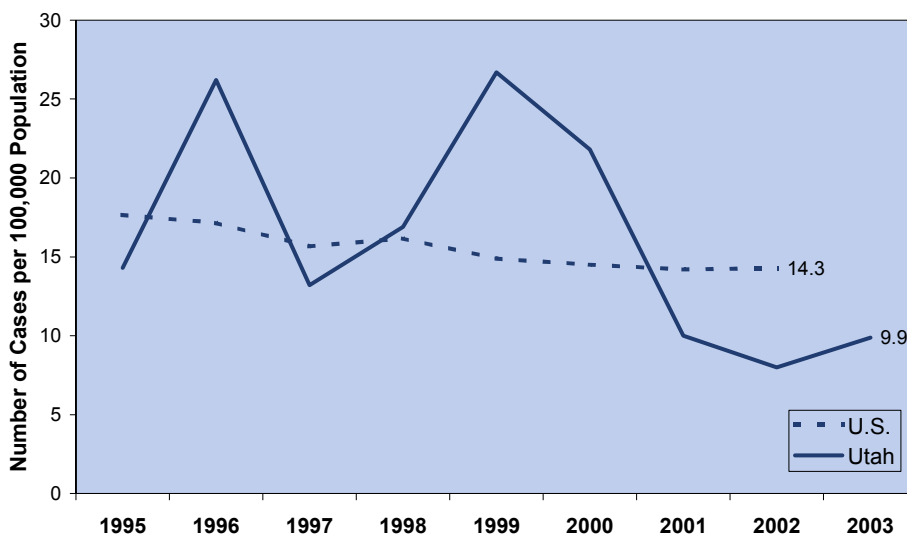
Salmonella are bacteria that can cause an infection in the stomach and intestines. People infected with *Salmonella* commonly have headache, stomach pain, diarrhea, nausea, vomiting and almost always fever. Symptoms usually appear within 6-72 hours after infection. Infections may enter the blood stream and become very serious.

Risk Factors for Foodborne Illness: *Salmonella*

All age groups can be infected with *Salmonella*, but young children, the elderly, and those with compromised immune systems are the most severely affected. People who have *Salmonella* with diarrhea (especially children in day care and people who handle food) can easily give this infection to other children, co-workers, or family members. If possible, children with diarrhea should not go to day care and food handlers should not go to work. Careful hand washing after using the toilet can reduce the risk of spreading illness. Careful hand washing includes using plenty of hot water and soap and rubbing hands vigorously for 20 seconds.

Salmonella bacteria are most commonly found in food products such as eggs, egg products, meats, poultry, unpasteurized milk, other unpasteurized dairy products, and cheese. Domestic and farm animals such as chickens, cattle, pigs, ducks, and reptiles have been found to carry the bacteria without symptoms. Hands should be washed thoroughly after handling animals. Children less than 1 year of age are at high risk of developing *Salmonella* when there are reptiles such as iguanas and snakes kept in the house.

Rates of Reported *Salmonella* Cases,
Utah and U.S., 1995-2003



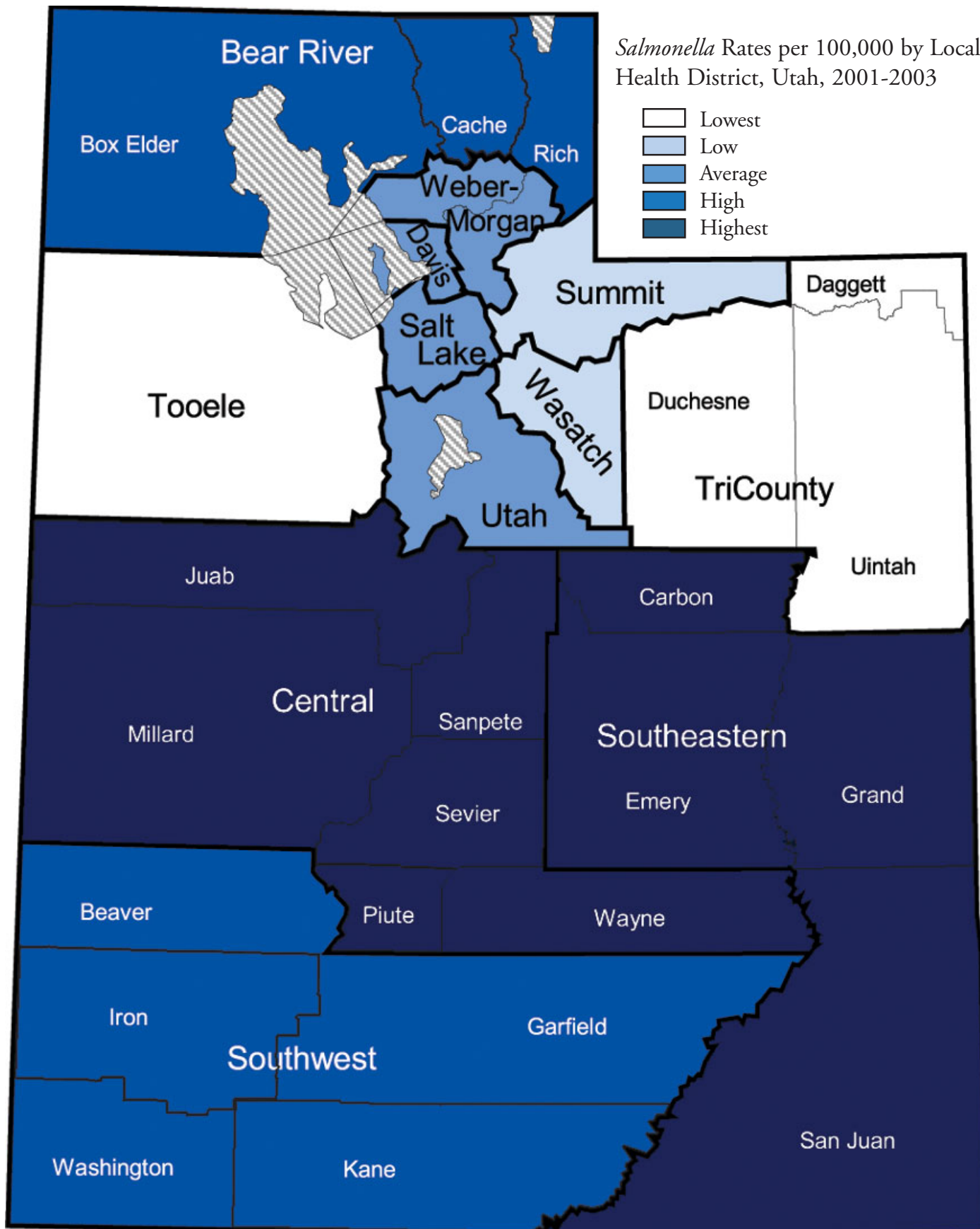
Sources: Utah Department of Health, Office of Epidemiology; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) National Center for Health Statistics

<i>Salmonella</i> Ranking, 2001-2003	Rate*
Tooele	4.4
TriCounty	5.6
Wasatch	6.0
Summit	6.2
Utah	6.8
Davis	7.2
Weber-Morgan	7.8
Salt Lake	10.5
Bear River	10.6
Southwest	11.7
Southeastern	11.9
Central	17.1

* Rate per 100,000.

It is important to note that many *Salmonella* infections are acquired from food prepared privately. Local health districts routinely inspect Utah restaurants to ensure that food is prepared and handled properly to prevent food-related illnesses. General guidelines to prevent *Salmonella* infections can be found at <http://health.utah.gov/els/epidemiology/epifacts/salmon.html>.

Foodborne Illness: *Salmonella*



Source: Utah Department of Health, Office of Epidemiology

Salmonella by Local Health District Utah, 2001-2003

Rank	Area of Residence	Average Population	Salmonella per 100,000		
			Average Annual Number of Events	Crude Rates	
				95% Confidence Interval	
				Lower	Upper
	State Total	2,324,149	216	9.3	(8.6 - 10.0)
9	Bear River	141,090	15	10.6	(7.8 - 14.2)
12	Central	68,206	11	17.1	(11.9 - 23.8)
6	Davis	249,124	18	7.2	(5.4 - 9.4)
8	Salt Lake	924,858	97	10.5	(9.3 - 11.8)
11	Southeastern	53,297	6	11.9	(7.2 - 18.6)
10	Southwest	150,674	17	11.7	(8.8 - 15.3)
4	Summit	32,032	2	6.2	(2.3 - 13.6)
1	Tooele	45,621	2	4.4	(1.6 - 9.5)
2	TriCounty	41,991	2	5.6	(2.2 - 11.4)
5	Utah	392,517	26	6.8	(5.4 - 8.5)
3	Wasatch	16,577	1	6.0	(1.2 - 17.6)
7	Weber-Morgan	208,162	16	7.8	(5.8 - 10.4)

Source: Utah Department of Health, Office of Epidemiology

Foodborne Illness: *E. coli* O157:H7

Definition: Number of infections caused by *Escherichia coli* O157:H7 per 100,000 population.

Similar to Healthy People 2010 Objective 10-2a: Reduce outbreaks of infections caused by key foodborne bacteria - *Escherichia coli* O157:H7.

Why Is It Important?

E. coli bacteria normally live in the intestines of humans and animals. Most strains of these bacteria are harmless, but some strains, like *E. coli* O157:H7, can cause serious illness. People infected by *E. coli* O157:H7 can develop a range of symptoms, from no symptoms at all or minor diarrhea to severe diarrhea and abdominal cramps. Blood is often seen in the stool. Usually little or no fever is present. Symptoms usually appear about three days after exposure, with a range of one to nine days. In some persons, particularly children under five years of age, the infection can cause a complication called hemolytic uremic syndrome (HUS), in which red blood cells are destroyed and the kidneys fail.

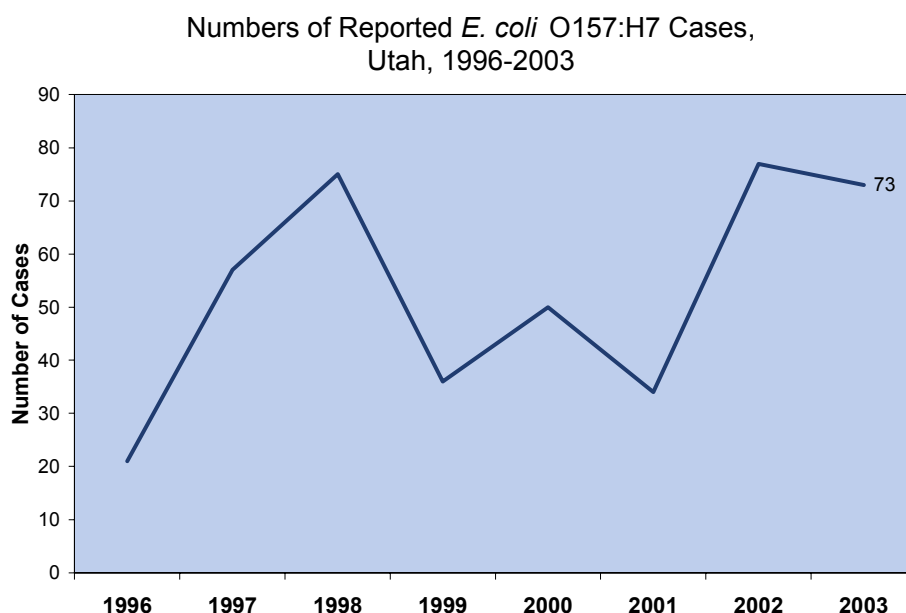
Risk Factors for Foodborne Illness: *E. coli* O157:H7

All age groups can be infected with *E. coli*, but young children, the elderly, and those with compromised immune systems are the most severely affected. *E. coli* O157:H7 bacteria live in the intestines of some healthy cattle, and contamination of meat can occur in the slaughtering process. Eating meat, especially ground beef that has not been cooked adequately, is a common way of getting the infection. Other possible sources of infection include drinking or swimming in water that is contaminated with sewage, eating unwashed fruits or vegetables, or drinking unpasteurized milk or juice.

People who have *E. coli* O157:H7 with diarrhea, especially children in day-care and people who handle food, can easily infect other children, co-workers, or family members. Careful hand washing after using the toilet can reduce the risk of spreading illness. This includes using plenty of hot water and soap and rubbing hands vigorously for 20 seconds. If possible, children with diarrhea should not go to day care and food handlers with diarrhea should not go to work.

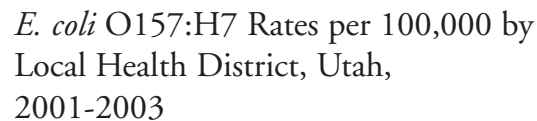
<i>E. Coli</i> O157:H7 Ranking, 2001-2003	Rate*
Summit	0.0
TriCounty	0.0
Tooele	0.7
Salt Lake	1.7
Southwest	2.2
Southeastern	2.5
Weber-Morgan	2.9
Utah	3.4
Central	3.4
Davis	3.5
Wasatch	4.0
Bear River	7.1

* Rate per 100,000.



Sources: Utah Department of Health, Office of Epidemiology

It is important to note that many *E. coli* O157:H7 infections are acquired from food prepared privately. Local health districts routinely inspect Utah restaurants to ensure that food is prepared and handled properly to prevent food-related illnesses. Some general guidelines to prevent *E. coli* O157:H7 infection can be found at <http://health.utah.gov/els/epidemiology/epifacts/ecoli.html>.



Contact: Communicable Disease Epidemiology Program, UDOH, 801-538-6191, <http://health.utah.gov/els/epidemiology/comdisease.html>

E. coli O157:H7 by Local Health District Utah, 2001-2003

Rank	Area of Residence	Average Population	Number of <i>E. Coli</i> Cases per 100,000		
			Average Annual Number of Events	Crude Rates	
				95% Confidence Interval**	
				Lower	Upper
	State Total	2,324,149	61	2.6	(2.3 - 3.0)
12	Bear River	141,090	10	7.1	(4.8 - 10.1)
8	Central	68,206	2	3.4	(1.4 - 7.0)
10	Davis	249,124	8	3.5	(2.3 - 5.1)
4	Salt Lake	924,858	15	1.7	(1.2 - 2.2)
6	Southeastern	53,297	1	2.5	(0.7 - 6.4)
5	Southwest	150,674	3	2.2	(1.1 - 4.1)
1	Summit	32,032	0	0.0	(. - .)
3	Tooele	45,621	0	0.7	(0.0 - 4.1)
1	TriCounty	41,991	0	0.0	(. - .)
8	Utah	392,517	13	3.4	(2.4 - 4.6)
11	Wasatch	16,577	1	4.0	(0.5 - 14.5)
7	Weber-Morgan	208,162	6	2.9	(1.7 - 4.6)

Source: Utah Department of Health, Office of Epidemiology

Note: Confidence intervals were not calculated for values of 0.